

AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of the claims in the present application.

Listing of Claims:

Claims 1-28 (canceled).

29 (currently amended). An antibody which binds a vertebrate Delta protein, which vertebrate Delta protein is encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, the nucleotide sequence of the ~~which~~ second nucleic acid is being selected from the group consisting of ~~the chick Delta sequence of SEQ ID NO:1, the antisense sequence to strand to the chick Delta sequence of SEQ ID NO:1, the chick Delta sequence of SEQ ID NO:3, the antisense sequence to strand to the chick Delta sequence of SEQ ID NO:3, the mouse Delta sequence of SEQ ID NO:11, the antisense sequence to strand to the mouse Delta sequence of SEQ ID NO:11, the human Delta sequence of SEQ ID NO:14, the antisense sequence to strand to the human Delta sequence of SEQ ID NO:14, the human Delta sequence of SEQ ID NO:26, the antisense sequence to strand to the human Delta sequence of SEQ ID NO:26, the mouse human Delta consensus sequence of SEQ ID NO:24, and the antisense sequence to strand to the mouse human Delta consensus sequence of SEQ ID NO:24,~~ said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC; and which antibody does not bind a *Drosophila* Delta protein.

30 (currently amended). An antibody, which binds a human Delta protein, which human Delta protein is encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, the nucleotide sequence of the ~~which~~ second nucleic acid is being selected from the group consisting of ~~the human Delta sequence of~~ SEQ ID NO:14, the antisense sequence to strand to the human Delta sequence of SEQ ID NO:14, ~~the human Delta sequence of~~ SEQ ID NO:26, and the antisense sequence to strand to the human Delta sequence of SEQ ID NO:26, said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC; which antibody does not bind a *Drosophila* Delta protein.

31 (previously presented). The antibody of claim 29 or 30 which is monoclonal.

32 (previously presented). A molecule comprising a fragment of the antibody of claim 31, which fragment binds a vertebrate Delta protein.

Claims 33-59 (canceled).

60 (currently amended). A composition comprising an antibody which binds to a vertebrate Delta protein; and a pharmaceutically acceptable carrier, which vertebrate Delta protein is encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, the nucleotide sequence of the ~~which~~ second nucleic acid is being selected from the group consisting of ~~the chick Delta sequence of~~ SEQ ID NO:1, the antisense sequence to strand to the chick Delta sequence of SEQ ID

NO:1, ~~the chick *Delta* sequence of SEQ ID NO:3, the antisense sequence to strand to the~~
~~chick *Delta* sequence of SEQ ID NO:3, the mouse *Delta* sequence of SEQ ID NO:11, the~~
~~antisense sequence to strand to the mouse *Delta* sequence of SEQ ID NO:11, the human~~
~~*Delta* sequence of SEQ ID NO:14, the antisense sequence to strand to the human *Delta*~~
~~sequence of SEQ ID NO:14, the human *Delta* sequence of SEQ ID NO:26, the antisense~~
~~sequence to strand to the human *Delta* sequence of SEQ ID NO:26, the mouse-human *Delta*~~
~~consensus sequence of SEQ ID NO:24, and the antisense sequence to strand to the mouse-~~
~~human *Delta* consensus sequence of SEQ ID NO:24, said high stringency conditions~~
 comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM
 Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml
 denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X
 SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and
 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing
 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at
 50°C in a solution containing 0.1X SSC; and which antibody does not bind a *Drosophila*
 Delta protein.

61 (currently amended). A composition comprising a fragment of an antibody
 to a vertebrate Delta protein containing the binding domain of the antibody; and a
 pharmaceutically acceptable carrier, which vertebrate Delta protein is encoded by a first
 nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its
 complement, the nucleotide sequence of the ~~which~~ second nucleic acid is being selected from
 the group consisting of ~~the chick *Delta* sequence of SEQ ID NO:1, the antisense sequence to~~
~~strand to the chick *Delta* sequence of SEQ ID NO:1, the chick *Delta* sequence of SEQ ID~~
 NO:3, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:3, the
~~mouse *Delta* sequence of SEQ ID NO:11, the antisense sequence to strand to the mouse *Delta*~~
~~sequence of SEQ ID NO:11, the human *Delta* sequence of SEQ ID NO:14, the antisense~~

~~sequence to strand to the human *Delta* sequence of SEQ ID NO:14, the human *Delta* sequence of SEQ ID NO:26, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:26, the mouse-human *Delta* consensus sequence of SEQ ID NO:24, and the antisense sequence to strand to the mouse-human *Delta* consensus sequence of SEQ ID NO:24, said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC; and which antibody does not bind a *Drosophila* Delta protein.~~

Claims 62-98 (canceled).

99 (currently amended). The antibody of claim 29, in which the vertebrate Delta protein comprises an amino acid sequence selected from the group consisting of (i) ~~the chick *Delta* sequence of SEQ ID NO:2, (ii) the mouse *Delta* sequence of SEQ ID NO:12, (iii) the human *Delta* sequence of SEQ ID NO:23, and (iv) a sequence comprising the human *Delta* sequences of SEQ ID NOS:65-80.~~

100 (previously presented). The composition of claim 60 or 61, in which the antibody is monoclonal.

101 (currently amended). A fragment of the antibody of claim 29 or 30, which fragment binds the vertebrate ~~a vertebrate~~ Delta protein.

102 (previously presented). The antibody of claim 29, 30, 31 or 99, which antibody is purified.

103 (previously presented). The fragment of claim 101, which fragment is purified.

104 (previously presented). The molecule of claim 32, which molecule is purified.

105 (currently amended). The antibody of claim 29, in which the vertebrate Delta protein comprises ~~the amino acid sequences of~~ SEQ ID NOS:65-80.

106 (currently amended). The antibody of claim 29, in which the vertebrate Delta protein comprises ~~the amino acid sequence of~~ SEQ ID NO:23.

107 (currently amended). The antibody of claim 29, in which the ~~vertebrate~~ Delta protein is encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, which nucleotide sequence of the second nucleic acid is selected from the group consisting of ~~the human Delta sequence of~~ SEQ ID NO:14, the antisense sequence to strand to the human Delta sequence of SEQ ID NO:14, ~~the human Delta sequence of~~ SEQ ID NO:26, and the antisense sequence to strand to the human Delta sequence of SEQ ID NO:26, said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC.

108 (currently amended). The antibody of claim 29, in which the ~~vertebrate~~ Delta protein is encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, which nucleotide sequence of the second nucleic acid is selected from the group consisting of ~~the mouse-human Delta consensus sequence of~~ SEQ ID NO:24, and the antisense sequence to strand to the mouse-human Delta consensus sequence of SEQ ID NO:24, said high stringency conditions

~~comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC.~~

109 (currently amended). A method of making an antibody comprising:

(a) administering an immunogenic amount of a vertebrate Delta protein to a host animal, in which the vertebrate Delta protein is encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, the nucleotide sequence of the ~~which~~ second nucleic acid is being selected from the group consisting of ~~the chick *Delta* sequence of SEQ ID NO:1, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:1, the chick *Delta* sequence of SEQ ID NO:3, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:3, the mouse *Delta* sequence of SEQ ID NO:11, the antisense sequence to strand to the mouse *Delta* sequence of SEQ ID NO:11, the human *Delta* sequence of SEQ ID NO:14, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:14, the human *Delta* sequence of SEQ ID NO:26, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:26, the mouse-human *Delta* consensus sequence of SEQ ID NO:24, and the antisense sequence to strand to the mouse-human *Delta* consensus sequence of SEQ ID NO:24,~~ said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a

solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC; such that an antibody to said Delta protein is produced by said host animal; and

(b) recovering the antibody.

110 (currently amended). The method of claim 109, in which the vertebrate Delta protein comprises ~~the amino acid sequences of~~ SEQ ID NOS:65-80.

111 (currently amended). The method of claim 109, in which the vertebrate Delta protein comprises ~~the amino acid sequence of~~ SEQ ID NO:23.

112 (currently amended). The method of claim 109, in which the vertebrate Delta protein comprises ~~the amino acid sequence of~~ SEQ ID NO:12.

113 (currently amended). The method of claim 109, in which the ~~vertebrate Delta protein is encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, which~~ nucleotide sequence of the second nucleic acid is selected from the group consisting of ~~the human Delta sequence of~~ SEQ ID NO:14, the antisense sequence to strand to the human Delta sequence of SEQ ID NO:14, ~~the human Delta sequence of~~ SEQ ID NO:26, and the antisense sequence to strand to the human Delta sequence of SEQ ID NO:26; ~~said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC.~~

114 (currently amended). A method of making an antibody comprising:

(a) administering an immunogenic amount of a fragment of a vertebrate Delta

protein to a host animal, in which the fragment comprises a domain of the protein selected from the group consisting of the extracellular domain, DSL domain, domain amino-terminal to the DSL domain, epidermal growth factor-like repeat domain, transmembrane domain, and intracellular domain, in which the vertebrate Delta protein comprises an amino acid sequence encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, the nucleotide sequence of the ~~which~~ second nucleic acid is being selected from the group consisting of ~~the chick *Delta* sequence of SEQ ID NO:1, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:1, the chick *Delta* sequence of SEQ ID NO:3, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:3, the mouse *Delta* sequence of SEQ ID NO:11, the antisense sequence to strand to the mouse *Delta* sequence of SEQ ID NO:11, the human *Delta* sequence of SEQ ID NO:14, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:14, the human *Delta* sequence of SEQ ID NO:26, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:26, the mouse human *Delta* consensus sequence of SEQ ID NO:24, and the antisense sequence to strand to the mouse human *Delta* consensus sequence of SEQ ID NO:24~~, said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC; such that an antibody to said fragment is produced by said host animal; and

(b) recovering the antibody.

115 (previously presented). The method of claim 114, in which the fragment of the vertebrate Delta protein comprises the membrane-associated region of the vertebrate

Delta protein.

116 (previously presented). The method of claim 114, in which the fragment of the vertebrate Delta protein comprises an epidermal growth factor-like factor-homologous repeat of the vertebrate Delta protein.

117 (previously presented). The method of claim 114, in which the fragment of the vertebrate Delta protein consists of at least 20 contiguous amino acids of the vertebrate Delta protein.

118 (previously presented). The method of claim 114, in which the fragment of the vertebrate Delta protein lacks the transmembrane and intracellular domain of the vertebrate Delta protein.

119 (previously presented). The method of claim 114, in which the fragment of the vertebrate Delta protein lacks the extracellular domain of the vertebrate Delta protein.

120 (previously presented). The method of claim 114, in which the fragment of the vertebrate Delta protein lacks the epidermal growth factor-like repeats of the vertebrate Delta protein.

121 (previously presented). An antibody produced by the method of claim 109, which does not bind a *Drosophila* Delta protein.

122 (previously presented). An antibody produced by the method of claim 114, which does not bind a *Drosophila* Delta protein.

123 (previously presented). The antibody of claim 121 or 122, in which the antibody is monoclonal.

124 (previously presented). The antibody of claim 121, 122 or 123, in which the antibody is purified.

125 (previously presented). A composition comprising an amount of an antibody of claim 121, 122, 123 or 124, and a pharmaceutically acceptable carrier.

126 (currently amended). The method of claim 109 or 114, in which the

vertebrate Delta protein comprises an amino acid sequence selected from the group consisting of ~~the chick Delta sequence of SEQ ID NO:2, the mouse Delta sequence of SEQ ID NO:12, the human Delta sequence of SEQ ID NO:23, and a sequence comprising the human Delta sequence of SEQ ID NOS:65-80.~~

127 (currently amended). The method of claim 109 or 114, in which the vertebrate Delta protein comprises ~~an amino acid sequence selected from the group consisting of the human Delta sequence of SEQ ID NO:23.~~

128 (currently amended). The method of claim 109 or 114, in which the vertebrate Delta protein comprises ~~an amino acid sequence selected from the group consisting of the human Delta sequences of SEQ ID NOS:65-80.~~

129 (currently amended). A method of making an antibody comprising:

(a) administering an immunogenic amount of a protein comprising a fragment of a vertebrate Delta protein to a host animal, in which the fragment comprises a domain of the protein selected from the group consisting of the extracellular domain, DSL domain, domain amino-terminal to the DSL domain, epidermal growth factor-like repeat domain, transmembrane domain, and intracellular domain, in which the vertebrate Delta protein comprises an amino acid sequence encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, the nucleotide sequence of the which second nucleic acid is being selected from the group consisting of the chick Delta sequence of SEQ ID NO:1, the antisense sequence to strand to the chick Delta sequence of SEQ ID NO:1, the chick Delta sequence of SEQ ID NO:3, the antisense sequence to strand to the chick Delta sequence of SEQ ID NO:3, the mouse Delta sequence of SEQ ID NO:11, the antisense sequence to strand to the mouse Delta sequence of SEQ ID NO:11, the human Delta sequence of SEQ ID NO:14, the antisense sequence to strand to the human Delta sequence of SEQ ID NO:14, the human Delta sequence of SEQ ID NO:26, the antisense sequence to strand to the human Delta sequence of SEQ ID NO:26, the mouse human Delta

~~consensus sequence of SEQ ID NO:24, and the antisense sequence to strand to the mouse~~
~~human *Delta* consensus sequence of SEQ ID NO:24~~, said high stringency conditions
 comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM
 Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml
 denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X
 SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and
 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing
 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at
 50°C in a solution containing 0.1X SSC; such that an antibody to said Delta fragment is
 produced by said host animal; and

(b) recovering the antibody.

130 (previously presented). The method according to claim 129, in which the
 fragment of the vertebrate Delta protein is joined via a peptide bond to an amino acid
 sequence of a second protein, in which the second protein is not the vertebrate Delta protein.

131 (currently amended). A method of making a monoclonal antibody
 comprising:

(a) administering an immunogenic amount of a vertebrate Delta protein to a
 mouse, in which the vertebrate Delta protein is encoded by a first nucleic acid that hybridizes
 under high stringency conditions to a second nucleic acid, or its complement, the nucleotide
sequence of the ~~which~~ second nucleic acid is being selected from the group consisting of the
~~chick *Delta* sequence of SEQ ID NO:1, the antisense sequence to strand to the chick *Delta*~~
~~sequence of SEQ ID NO:1, the chick *Delta* sequence of SEQ ID NO:3, the antisense~~
~~sequence to strand to the chick *Delta* sequence of SEQ ID NO:3, the mouse *Delta* sequence~~
~~of SEQ ID NO:11, the antisense sequence to strand to the mouse *Delta* sequence of SEQ ID~~
~~NO:11, the human *Delta* sequence of SEQ ID NO:14, the antisense sequence to strand to the~~
~~human *Delta* sequence of SEQ ID NO:14, the human *Delta* sequence of SEQ ID NO:26, the~~

antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:26, ~~the mouse-human *Delta* consensus sequence~~ of SEQ ID NO:24, and the antisense sequence to strand to the mouse-human *Delta* consensus sequence of SEQ ID NO:24, said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC;

(b) recovering spleen cells from said mouse;

(c) fusing the recovered spleen cells with a cell of a mouse myeloma to generate hybridomas;

(d) screening to select a hybridoma producing antibody to said vertebrate Delta protein; and

(e) recovering the antibody.

132 (currently amended). A method of making a monoclonal antibody comprising:

(a) fusing a spleen cell from a mouse immunized with an immunogenic amount of a vertebrate Delta protein with a cell of a mouse myeloma to generate hybridomas, in which the vertebrate Delta protein is encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, the nucleotide sequence of the ~~which~~ second nucleic acid is being selected from the group consisting of the ~~chick *Delta* sequence~~ of SEQ ID NO:1, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:1, ~~the chick *Delta* sequence~~ of SEQ ID NO:3, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:3, ~~the mouse *Delta* sequence~~

of SEQ ID NO:11, the antisense sequence to strand to the mouse *Delta* sequence of SEQ ID NO:11, the human *Delta* sequence of SEQ ID NO:14, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:14, the human *Delta* sequence of SEQ ID NO:26, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:26, the mouse-human *Delta* consensus sequence of SEQ ID NO:24, and the antisense sequence to strand to the mouse-human *Delta* consensus sequence of SEQ ID NO:24, said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC;

(b) screening to select a hybridoma producing antibody to said vertebrate Delta protein; and

(c) recovering the antibody.

133 (currently amended). A method of making a monoclonal antibody comprising:

(a) administering an immunogenic amount of a vertebrate Delta protein to a host animal, in which the vertebrate Delta protein is encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, the nucleotide sequence of the ~~which~~ second nucleic acid is being selected from the group consisting of ~~the chick *Delta* sequence~~ of SEQ ID NO:1, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:1, ~~the chick *Delta* sequence~~ of SEQ ID NO:3, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:3, ~~the mouse *Delta* sequence~~ of SEQ ID NO:11, the antisense sequence to strand to the mouse *Delta* sequence of

SEQ ID NO:11, ~~the human *Delta* sequence of~~ SEQ ID NO:14, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:14, ~~the human *Delta* sequence of~~ SEQ ID NO:26, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:26, the ~~mouse-human *Delta* consensus sequence of~~ SEQ ID NO:24, and the antisense sequence to strand to the mouse-human *Delta* consensus sequence of SEQ ID NO:24, said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC;

(b) recovering lymphocytes from said host animal;

(c) fusing the recovered lymphocytes with a cell of a myeloma, plasmacytoma or lymphoblastoid cell line to generate hybridomas;

(d) screening to select a hybridoma producing antibody to said vertebrate Delta protein; and

(e) recovering the antibody.

134 (currently amended). A method of making a monoclonal antibody comprising:

(a) fusing a lymphocyte from a host animal immunized with an immunogenic amount of a vertebrate Delta protein with a cell of a myeloma, plasmacytoma or lymphoblastoid cell line to generate hybridomas, in which the vertebrate Delta protein is encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, the nucleotide sequence of the ~~which~~ second nucleic acid is being selected from the group consisting of ~~the chick *Delta* sequence of~~ SEQ ID NO:1, the

antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:1, ~~the chick *Delta* sequence of SEQ ID NO:3, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:3, the mouse *Delta* sequence of SEQ ID NO:11, the antisense sequence to strand to the mouse *Delta* sequence of SEQ ID NO:11, the human *Delta* sequence of SEQ ID NO:14, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:14, the human *Delta* sequence of SEQ ID NO:26, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:26, the mouse-human *Delta* consensus sequence of SEQ ID NO:24, and the antisense sequence to strand to the mouse-human *Delta* consensus sequence of SEQ ID NO:24~~, said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC;

(b) screening to select a hybridoma producing antibody to said vertebrate Delta protein; and

(c) recovering the antibody.

135 (currently amended). A method of making a monoclonal antibody comprising:

(a) administering an immunogenic amount of a vertebrate Delta protein to a host animal, in which the vertebrate Delta protein is encoded by a first nucleic acid that hybridizes under high stringency conditions to a second nucleic acid, or its complement, the nucleotide sequence of the ~~which~~ second nucleic acid is being selected from the group consisting of ~~the chick *Delta* sequence of SEQ ID NO:1, the antisense sequence to strand to~~

~~the chick *Delta* sequence of SEQ ID NO:1, the chick *Delta* sequence of SEQ ID NO:3, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:3, the mouse *Delta* sequence of SEQ ID NO:11, the antisense sequence to strand to the mouse *Delta* sequence of SEQ ID NO:11, the human *Delta* sequence of SEQ ID NO:14, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:14, the human *Delta* sequence of SEQ ID NO:26, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:26, the mouse-human *Delta* consensus sequence of SEQ ID NO:24, and the antisense sequence to strand to the mouse-human *Delta* consensus sequence of SEQ ID NO:24, said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC;~~

(b) recovering lymphocytes from said host animal;

(c) immortalizing the recovered lymphocytes with Epstein-Barr virus to generate immortalized cells;

(d) screening to select an immortalized cell producing antibody ~~3~~ said vertebrate *Delta* protein; and

(e) recovering the antibody.

136 (currently amended). A method of making a monoclonal antibody comprising:

(a) immortalizing a lymphocyte from a host animal immunized with an immunogenic amount of a vertebrate *Delta* protein with Epstein-Barr virus to generate immortalized cells, in which the vertebrate *Delta* protein is encoded by a first nucleic acid

that hybridizes under high stringency conditions to a second nucleic acid, or its complement, the nucleotide sequence of the ~~which~~ second nucleic acid is being selected from the group consisting of ~~the chick *Delta* sequence of SEQ ID NO:1, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:1, the chick *Delta* sequence of SEQ ID NO:3, the antisense sequence to strand to the chick *Delta* sequence of SEQ ID NO:3, the mouse *Delta* sequence of SEQ ID NO:11, the antisense sequence to strand to the mouse *Delta* sequence of SEQ ID NO:11, the human *Delta* sequence of SEQ ID NO:14, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:14, the human *Delta* sequence of SEQ ID NO:26, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:26, the mouse human *Delta* consensus sequence of SEQ ID NO:24, and the antisense sequence to strand to the mouse human *Delta* consensus sequence of SEQ ID NO:24~~, said high stringency conditions comprising pretreatment for 8 hours to overnight in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 500 µg/ml denatured salmon sperm DNA; hybridization for 48 hours at 68°C in a solution containing 6X SSC, 50 mM Tris-HCl (pH 7.5), 1 mM EDTA, 0.02% PVP, 0.02% Ficoll, 0.02% BSA, and 100 µg/ml denatured salmon sperm DNA; washing for 1 hour at 37°C in a solution containing 2X SSC, 0.01% PVP, 0.01% Ficoll, and 0.01% BSA; and a second washing for 45 minutes at 50°C in a solution containing 0.1X SSC;

(b) screening to select an immortalized cell producing antibody to said vertebrate Delta protein; and

(c) recovering the antibody.

Claim 137 (canceled).

138 (currently amended). The method of claim 131, 132, 133, 134, 135 or 136, in which the nucleotide sequence of the second nucleic acid is selected from the group consisting of ~~the human *Delta* sequence of SEQ ID NO:14, the antisense sequence to strand to the human *Delta* sequence of SEQ ID NO:14, the human *Delta* sequence of SEQ ID~~

NO:26, the antisense sequence to strand to the human ~~Delta~~ sequence of SEQ ID NO:26, the ~~mouse-human ~~Delta~~ consensus sequence~~ of SEQ ID NO:24, and the antisense sequence to strand to the mouse-human ~~Delta~~ consensus sequence of SEQ ID NO:24.

139 (currently amended). The method of claim 131, 132, 133, 134, 135 or 136, in which the Delta protein comprises ~~the amino acid sequence~~ of SEQ ID NOS:65-80.

140 (currently amended). The method of claim 131, 132, 133, 134, 135 or 136, in which the Delta protein comprises ~~the amino acid sequence~~ of SEQ ID NO:23.

141 (currently amended). The method of claim 131, 132, 133, 134, 135 or 136, in which the Delta protein comprises ~~the amino acid sequence~~ of SEQ ID NO:12.

142 (previously presented). An antibody produced by the method of claim 131, 132, 133, 134, 135 or 136, which does not bind a *Drosophila* Delta protein.

143 (previously presented). The antibody of claim 142, in which the antibody is purified.

144 (previously presented). A composition comprising the antibody of claim 142, and a pharmaceutically acceptable carrier.

145 (previously presented). A composition comprising the antibody of claim 143, and a pharmaceutically acceptable carrier.

146 (currently amended). The composition of claim 60 or 61, in which the vertebrate Delta protein comprises an amino acid sequence selected from the group consisting of (i) ~~the chick ~~Delta~~ sequence~~ of SEQ ID NO:2, (ii) ~~the mouse ~~Delta~~ sequence~~ of SEQ ID NO:12, (iii) ~~the human ~~Delta~~ sequence~~ of SEQ ID NO:23, and (iv) a sequence comprising the ~~human ~~Delta~~ sequences~~ of SEQ ID NOS:65-80.

Claims 147-151 (canceled).

152 (new). An antibody which binds a human Delta protein, which human Delta protein comprises SEQ ID NO:65; and which antibody does not bind a *Drosophila* Delta protein.

153 (new). A composition comprising (a) an antibody to a vertebrate Delta protein, which vertebrate Delta protein comprises SEQ ID NO:65, which antibody does not bind a *Drosophila* Delta protein; and (b) a pharmaceutically acceptable carrier.

154 (new). A composition comprising (a) a fragment of an antibody to a vertebrate Delta protein containing the binding domain of the antibody, which vertebrate Delta protein comprises SEQ ID NO:65, which antibody does not bind a *Drosophila* Delta protein; and (b) a pharmaceutically acceptable carrier.

155 (new). A method of making an antibody comprising:

(a) administering an immunogenic amount of a vertebrate Delta protein to a host animal, such that an antibody to said Delta protein is produced by said host animal, in which the vertebrate Delta protein comprises SEQ ID NO:65; and

(b) recovering the antibody.

156 (new). A method of making an antibody comprising:

(a) administering an immunogenic amount of a fragment of a vertebrate Delta protein to a host animal, such that an antibody to said fragment is produced by said host animal; in which the fragment comprises a domain of the protein selected from the group consisting of the extracellular domain, DSL domain, domain amino-terminal to the DSL domain, epidermal growth factor-like repeat domain, transmembrane domain, and intracellular domain; in which the vertebrate Delta protein comprises SEQ ID NO:65; and

(b) recovering the antibody.

157 (new). A method of making an antibody comprising:

(a) administering an immunogenic amount of a protein comprising a fragment of a vertebrate Delta protein to a host animal, such that an antibody to said Delta fragment is produced by said host animal; in which the fragment comprises a domain of the protein selected from the group consisting of the extracellular domain, DSL domain, domain amino-terminal to the DSL domain, epidermal growth factor-like repeat domain, transmembrane

domain, and intracellular domain; in which the vertebrate Delta protein comprises SEQ ID NO:65; and

(b) recovering the antibody.

158 (new). A method of making a monoclonal antibody comprising:

(a) administering an immunogenic amount of a vertebrate Delta protein to a mouse, which vertebrate Delta protein comprises SEQ ID NO:65;

(b) recovering spleen cells from said mouse;

(c) fusing the recovered spleen cells with a cell of a mouse myeloma to generate hybridomas;

(d) screening to select a hybridoma producing antibody to said vertebrate Delta protein; and

(e) recovering the antibody.

159 (new). A method of making a monoclonal antibody comprising:

(a) fusing a spleen cell from a mouse immunized with an immunogenic amount of a vertebrate Delta protein with a cell of a mouse myeloma to generate hybridomas, which vertebrate Delta protein comprises SEQ ID NO:65;

(b) screening to select a hybridoma producing antibody to said vertebrate Delta protein; and

(c) recovering the antibody.

160 (new). A method of making a monoclonal antibody comprising:

(a) administering an immunogenic amount of a vertebrate Delta protein to a host animal, in which the vertebrate Delta protein comprises SEQ ID NO:65;

(b) recovering lymphocytes from said host animal;

(c) fusing the recovered lymphocytes with a cell of a myeloma, plasmacytoma or lymphoblastoid cell line to generate hybridomas;

(d) screening to select a hybridoma producing antibody to said vertebrate

Delta protein; and

(e) recovering the antibody.

161 (new). A method of making a monoclonal antibody comprising:

(a) fusing a lymphocyte from a host animal immunized with an immunogenic amount of a vertebrate Delta protein with a cell of a myeloma, plasmacytoma or lymphoblastoid cell line to generate hybridomas, which vertebrate Delta protein comprises SEQ ID NO:65;

(b) screening to select a hybridoma producing antibody to said vertebrate Delta protein; and

(c) recovering the antibody.

162 (new). A method of making a monoclonal antibody comprising:

(a) administering an immunogenic amount of a vertebrate Delta protein to a host animal, which vertebrate Delta protein comprises SEQ ID NO:65;

(b) recovering lymphocytes from said host animal;

(c) immortalizing the recovered lymphocytes with Epstein-Barr virus to generate immortalized cells;

(d) screening to select an immortalized cell producing antibody to said vertebrate Delta protein; and

(e) recovering the antibody.

163 (new). A method of making a monoclonal antibody comprising:

(a) immortalizing a lymphocyte from a host animal immunized with an immunogenic amount of a vertebrate Delta protein with Epstein-Barr virus to generate immortalized cells, which vertebrate Delta protein comprises SEQ ID NO:65;

(b) screening to select an immortalized cell producing antibody to said vertebrate Delta protein; and

(c) recovering the antibody.

164 (new). The antibody of claim 29, in which the vertebrate Delta protein comprises SEQ ID NO:12.

165 (new). The composition of claim 60 or 61, in which the vertebrate Delta protein comprises SEQ ID NO:12.

166 (new). The composition of claim 60 or 61, in which the nucleotide sequence of the second nucleic acid is SEQ ID NO:24 or the antisense sequence to SEQ ID NO:24.